

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
7 September 2001 (07.09.2001)

PCT

(10) International Publication Number
WO 01/65274 A1

(51) International Patent Classification⁷: G01S 5/18, G01C 21/00
(21) International Application Number: PCT/DK01/00141
(22) International Filing Date: 2 March 2001 (02.03.2001)
(25) Filing Language: English
(26) Publication Language: English
(30) Priority Data: PA 2000 00351 3 March 2000 (03.03.2000) DK
(71) Applicant and
(72) Inventor: LARSEN, Mikael, Bliksted [DK/DK]: Sprydet 61, DK-3070 Sneekkersten (DK).

(81) Designated States (*national*): AE, AG, AL, AM, AT, AT (utility model), AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, CZ (utility model), DE, DE (utility model), DK, DK (utility model), DM, DZ, EE, EE (utility model), ES, FI, FI (utility model), GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SK (utility model), SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.

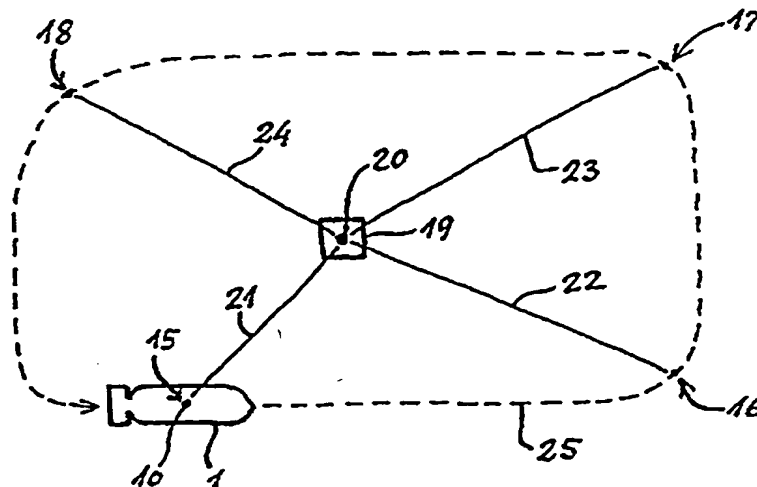
(84) Designated States (*regional*): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

Published:

— with international search report
— before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments

[Continued on next page]

(54) Title: METHODS AND SYSTEMS FOR NAVIGATING UNDER WATER



(57) Abstract: In a method for determining absolute position under water of a submersible vessel (1) having a dead reckoning navigation system and receiving acoustic signals from a reference station (19), signals are received from one reference station in several positions (15-18) of the vessel. Estimated absolute positions of the vessel are calculated using range data and relative position data. Range rate data derived from the signals are preferably utilised. In a method for scanning an underwater survey area, the absolute position of a vessel (1) is intermittently being determined according to said method. The reference station may be placed at a fixed absolute position (19), or on the surface of the water, preferably in a buoy or a vessel. A system for determining the absolute position under water of a vessel comprises: acoustic communication means in a reference station and on board the vessel; a dead reckoning navigation system on board the vessel; and computing means.

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